

What is claimed is:

1. A device for determining the wheel geometry and/or the axle geometry of motor vehicles in an inspection room, using an optical measuring apparatus having at least one image-taking device (10) which records a marking device including at least one body feature (28) and one reference feature system (24), and having an evaluating device, the position of the reference features (22) in the inspection room being known in the evaluating device, and the recording of the marking device taking place during travel of the motor vehicle, wherein the image-taking device (10) is connected via a swivel joint to the wheel rim (18) of a wheel (14) that is to be measured, and follows the rotational motion of the wheel (14), the optical axis of the image-taking device (10) always being aligned essentially perpendicular to the roadway plane (16) and the axis of rotation (12) of the swivel joint being aligned in all wheel positions essentially parallel to the roadway plane (16); the reference feature system (24) is situated essentially in the roadway plane (16), in the field of view of the image-taking device (10); the at least one body feature (28) is always situated in the field of view of the image-taking device (10), and follows the movement of the motor vehicle; and the position of the axis of rotation and or the plane of rotation of the wheel (14) is able to be determined in the light of the position of a wheel feature that is to be ascertained.

2. The device as recited in Claim 1, wherein the wheel feature is identified by a point on the wheel (14) which is determinable with the aid of the focal length and the corrected distortion of the objective, or similar optical property of the image-taking device (10), the positions of at least three of the reference features (22) of the reference feature system (24) and the relative position of the image-taking device (10) with respect to the axis of rotation (12) of the swivel joint.

3. The device as recited in Claim 1 or 2, wherein the determination of the plane of rotation of the wheel (14) is made by recording the path of rotation of the wheel feature, the translational movement of the motor vehicle, which is ascertained by the path of motion of the at least one body feature (28), being eliminated.



4. The device as recited in one of Claims 1 through 3, wherein the reference feature system (24) has a carrier unit whose positioning in the inspection room may be freely configured, and on which are provided the reference features in the form of reference structures or specially mounted reference features.

5. The device as recited in one of Claims 1 through 4, wherein the reference feature system (24) and/or the at least one body feature (28) are developed as optically recordable marks, and the image-taking device (10) is a camera.

6. The device as recited in Claim 5, wherein the optically recordable marks are formed by light-emitting diodes, lamps, light exit openings of optical fibers or similar light sources.

7. The device as recited in Claim 6, wherein at least a part of the light sources light up synchronously with the camera shutter of the image-taking device (10).

8. The device as recited in one of Claims 1 through 7, wherein the reference feature system (24) and/or the at least one body feature (28) bears a coding that is recordable by the image-taking device (10).

9. The device as recited in one of Claims 6 through 8, wherein this coding is formed by showing patterns that light up in temporal sequence.

10. The device as recited in one of Claims 6 through 9, wherein the coding is formed by the lighting up of differently colored light sources in temporal sequence, and the image-taking device (10) is a color camera.



11. The device for determining the wheel geometry and/or the axle geometry of motor vehicles in an inspection room, using an optical measuring apparatus having at least one image-taking device (10) which records a marking device including one reference feature system (24), and having an evaluating device, the position of the reference features (22) in the inspection room being known in the evaluating device, and the recording of the marking device taking place during travel of the motor vehicle, wherein the image-taking device (10) is connected via a swivel joint to the wheel rim (18) of a wheel (14) that is to be measured, and follows the rotational motion of the wheel (14), the optical axis of the image-taking device (10) always being aligned essentially perpendicular to the roadway plane (16) and the axis of rotation (12) of the swivel joint being aligned in all wheel positions essentially parallel to the roadway plane (16); at the motor vehicle there is positioned an additional image-taking device that is operable independently of image-taking device (10), which records reference feature system (24); and the position of the axis of rotation and/or the plane of rotation of the wheel (14) is able to be determined in the light of the position of a wheel feature that is to be ascertained.

12. The device as recited in Claim 11, wherein the reference feature system (24) is situated essentially in the roadway plane (16), in the field of view of the image-taking device (10) and of the additional image-taking device.

13. The device as recited in Claim 11, wherein the reference feature system (24) is situated parallel to the roadway plane and above the motor vehicle in the field of view of the image-taking device (10) and of the additional image-taking device.